link save

```
LOCUS       T61718                  102 bp    mRNA    linear   EST 14-FEB-1995
DEFINITION  yb92e07.r1 Stratagene liver (#937224) Homo sapiens cDNA clone
            IMAGE:78660 5' similar to SP:B42997 B42997
            RETINOBLASTOMA-ASSOCIATED PROTEIN 2 - ;, mRNA sequence.
ACCESSION   T61718
VERSION     T61718.1  GI:664961
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 102)
  AUTHORS   Hillier,L., Lennon,G., Becker,M., Bonaldo,M.F., Chiapelli,B.,
            Chissoe,S., Dietrich,N., DuBuque,T., Favello,A., Gish,W., Hawkins
            ,M., Hultman,M., Kucaba,T., Lacy,M., Le,M., Le,N., Mardis,E., Moore
            ,B., Morris,M., Parsons,J., Prange,C., Rifkin,L., Rohlfing,T.,
            Schellenberg,K., Soares,M.B., Tan,F., Thierry-Meg,J., Trevaskis,E.,
            Underwood,K., Wohldmann,P., Waterston,R., Wilson,R. and Marra,M.
  TITLE     Generation and analysis of 280,000 human expressed sequence tags
  JOURNAL   Genome Res. 6 (9), 807-828 (1996)
  MEDLINE   97044478
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 34
            High qality sequence stops: 66 Source: IMAGE Consortium, LLNL This
            clone is available royalty-free through LLNL ; contact the IMAGE
            Consortium (info@image.llnl.gov) for further information.
            Seq primer: M13RP1
            High quality sequence stop: 66.
FEATURES             Location/Qualifiers
     source          1..102
                     /organism="Homo sapiens"
                     /db_xref="GDB: 498405"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:78660"
                     /clone_lib="Stratagene liver (#937224)"
                     /sex="male"
                     /dev_stage="49 years old"
                     /lab_host="SOLR cells (kanamycin resistant)"
                     /note="Organ: liver; Vector: pBluescript SK; Site_1: EcoRI
                     ; Site_2: XhoI; Cloned unidirectionally.  Primer: Oligo
                     dT. Hepatectomy from normal male caucasian. Average insert
                     size: 1.1 kb; Uni-ZAP XR Vector; ~5' adaptor sequence: 5'
                     GAATTCGGCACGAG 3' ~3' adaptor sequence: 5'
                     CTCGAGTTTTTTTTTTTTTTTT 3'"
BASE COUNT       33 a     12 c     26 g     29 t      2 others
ORIGIN
      1  acgagggaaa aatcaaaaaa tgtatgaagc tagtattaaa gattctgatg tcgaaggtgg
     61  agaggtcctt tacttggtgc attactgcng atggcatntt at
//
```

link save

```
LOCUS       R14337                  395 bp    mRNA    linear   EST 12-APR-1995
DEFINITION  yf79b11.r1 Soares infant brain 1NIB Homo sapiens cDNA clone
            IMAGE:28436 5', mRNA sequence.
ACCESSION   R14337
VERSION     R14337.1  GI:767413
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 395)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 1350
            High quality sequence stops: 298 Source: IMAGE Consortium, LLNL
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 1350   Std Error: 0.00
            Seq primer: M13RP1
            High quality sequence stop: 298.
FEATURES             Location/Qualifiers
     source          1..395
                     /organism="Homo sapiens"
                     /db_xref="GDB: 400783"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:28436"
                     /clone_lib="Soares infant brain 1NIB"
                     /sex="female"
                     /dev_stage="73 days post natal"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: whole brain; Vector: Lafmid BA; Site_1: Not
                     I; Site_2: Hind III; 1st strand cDNA was primed with a Not
                     I - oligo(dT) primer [5'
                     AACTGGAAGAATTCGCGGCCGCAGGAATTTTTTTTTTTTTTTT 3'];
                     double-stranded cDNA was ligated to Hind III adaptors
                     (Pharmacia), digested with Not I and directionally cloned
                     into the Not I and Hind III sites of the Lafmid BA vector.
                     Library went through one round of normalization. Library
                     constructed by Bento Soares and M.Fatima Bonaldo."
BASE COUNT      129 a     51 c     79 g    133 t      3 others
ORIGIN
        1  aaagagtaac tttgattacg taaaaagcct ttgaagtatt ttaatgaaca ctagtctttg
       61  ctattggtaa gaaatctgct tgttttatta aaatgcttaa ttgaagaaaa taatattctt
      121  ctgtgattaa aattaggaag aaatagaacc atttccagaa gaaagggaga actttcttca
      181  gcaattgtac aaatttatgg aagatagagg tgagtatttt ttatttatca ttaacgtggg
      241  taagttttgg gacagataat taggtatctt aaaaataagg aataggaatt ttgtttactg
      301  aactttatgt catcaggtaa ttatgggcng tctttttga ctctggatat caccngcacc
      361  ctggcctagc gccntgtcca cgggtaacca ggtag
//
```

link save

```
LOCUS       R27405                  324 bp    mRNA    linear   EST 24-APR-1995
DEFINITION  yh46c12.r1 Soares placenta Nb2HP Homo sapiens cDNA clone
            IMAGE:132790 5', mRNA sequence.
ACCESSION   R27405
VERSION     R27405.1  GI:783540
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 324)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 1638
            High quality sequence stops: 227
            Source: IMAGE Consortium, LLNL
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 1638   Std Error: 0.00
            Seq primer: M13RP1
            High quality sequence stop: 227.
FEATURES             Location/Qualifiers
     source          1..324
                     /organism="Homo sapiens"
                     /db_xref="GDB: 538432"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:132790"
                     /clone_lib="Soares placenta Nb2HP"
                     /sex="Female"
                     /dev_stage="placenta obtained at birth (full term)"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: placenta; Vector: pT7T3D (Pharmacia) with a
                     modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st
                     strand cDNA was primed with a Not I - oligo(dT) primer [5'
                     AACTGGAAGAATTCGCGGCCGCAGGAATTTTTTTTTTTTTTTTT 3'],
                     double-stranded cDNA was ligated to Eco RI adaptors
                     (Pharmacia), digested with Not I and cloned into the Not I
                     and Eco RI sites of the modified pT7T3 vector. Library
                     went through one round of normalization. Library
                     constructed by Bento Soares and M.Fatima Bonaldo.  "
BASE COUNT      103 a     51 c     61 g    105 t      4 others
ORIGIN
        1  ccagtttcgc ataagttgag agtaggtatt cttgaacctg tgatcctgat ttgaaaaata
       61  gctctctcat atggtaaaaa aaacaaaaca aaacaaaaca aaaccacgaa cagtcttgct
      121  agtccctttt ctcatatggg aatttttact gtggggattc taactattgg gatacttttt
      181  aaggcatatt cctctataaa acataaaatg tctaggactt acctgggttt tgaacagctt
      241  agtgttaaaa gggtaacttt gnattacgta aaaaggcctt tgnaaggtat tttnaatgga
      301  acacttggtc tttgcntatt gggt
//
```

link ● save

```
LOCUS       R40663                  412 bp    mRNA    linear   EST 22-MAY-1995
DEFINITION  yf79b11.s1 Soares infant brain 1NIB Homo sapiens cDNA clone
            IMAGE:28436 3', mRNA sequence.
ACCESSION   R40663
VERSION     R40663.1  GI:821001
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 412)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     On May 5, 1995 this sequence version replaced gi:798279.
            Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 1350
            High quality sequence stops: 225 Source: IMAGE Consortium, LLNL
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 1350   Std Error: 0.00
            Seq primer: Promega -21m13
            High quality sequence stop: 225.
FEATURES             Location/Qualifiers
     source          1..412
                     /organism="Homo sapiens"
                     /db_xref="GDB: 400783"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:28436"
                     /clone_lib="Soares infant brain 1NIB"
                     /sex="female"
                     /dev_stage="73 days post natal"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: whole brain; Vector: Lafmid BA; Site_1: Not
                     I; Site_2: Hind III; 1st strand cDNA was primed with a Not
                     I - oligo(dT) primer [5'
                     AACTGGAAGAATTCGCGGCCGCAGGAATTTTTTTTTTTTTTTT 3'];
                     double-stranded cDNA was ligated to Hind III adaptors
                     (Pharmacia), digested with Not I and directionally cloned
                     into the Not I and Hind III sites of the Lafmid BA vector.
                     Library went through one round of normalization. Library
                     constructed by Bento Soares and M.Fatima Bonaldo."
BASE COUNT      126 a     71 c     78 g    135 t      2 others
ORIGIN
        1  ttttttttttc attctaacac aagaaaacgc aaggcaagga tgctaaatca aacaaaccat
       61  gagaaagtgg tagaggaggt aacaggggag gggtacaatg cctcatatgg ccatttctac
      121  aaaatatatg actggcttaa tcatattttt tcattctttt ctagtattag attttattca
      181  ttttctttgc ttttttcattt atcttataca agagcctatg aaacagcata cttcttaggg
      241  ccaaccctcc attcatgtaa agaaataata caagaattca aaggacattt tatattggaa
      301  aaaggaaata tacttatatt gtgttagggc gttgttatcc tttatggaaa cctaaacctg
      361  gacaaccggg gtcggtttct actcctcggg cnttccattc gggggntttg gg
//
```

link save

```
LOCUS       R44970                  480 bp    mRNA    linear   EST 22-MAY-1995
DEFINITION  yg33e02.s1 Soares infant brain 1NIB Homo sapiens cDNA clone
            IMAGE:34227 3', mRNA sequence.
ACCESSION   R44970
VERSION     R44970.1  GI:824325
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 480)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     On May 9, 1995 this sequence version replaced gi:803694.
            Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 1365
            High quality sequence stops: 397 Source: IMAGE Consortium, LLNL
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 1365   Std Error: 0.00
            Seq primer: Promega -21m13
            High quality sequence stop: 397.
FEATURES             Location/Qualifiers
     source          1..480
                     /organism="Homo sapiens"
                     /db_xref="GDB: 406574"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:34227"
                     /clone_lib="Soares infant brain 1NIB"
                     /sex="female"
                     /dev_stage="73 days post natal"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: whole brain; Vector: Lafmid BA; Site_1: Not
                     I; Site_2: Hind III; 1st strand cDNA was primed with a Not
                     I - oligo(dT) primer [5'
                     AACTGGAAGAATTCGCGGCCGCAGGAATTTTTTTTTTTTTTTT 3'];
                     double-stranded cDNA was ligated to Hind III adaptors
                     (Pharmacia), digested with Not I and directionally cloned
                     into the Not I and Hind III sites of the Lafmid BA vector.
                     Library went through one round of normalization. Library
                     constructed by Bento Soares and M.Fatima Bonaldo."
BASE COUNT      110 a     84 c    125 g    160 t      1 others
ORIGIN
      1  tatttcctct tctgtcgttc cccaactgtt agatgtttct tagttgaggc gtccgttttg
     61  tgaatatgag aataaagcac gcatttgttg ctgaataagt tgatctttgc tttctaaaga
    121  ctccagcaaa cattctaagt tagtggtttt cctgttgaga atctctatgt gtaatgagag
    181  atttgctgtt gagattgtgt tatacatgtg taagtatgaa tgcagacaaa aggttgaagg
    241  attactagtg tagggaatga aggacctgct ccatctgtaa tcttgttttg cttgctcttc
    301  cttgcccttc tctaccacgg ttgggtcatt ctcactgcca agggaacctg gacaatgtta
    361  ctcttgcttg ggcgttttaa gccttgggtg tgtaagggca ttacaggacc agggggaagg
    421  agtctttcat ccatcctcca gtggatggaa ggatgagggg tggttagggg gnaacaggtt
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//

link • save

```
LOCUS       H08612                  398 bp    mRNA    linear   EST 23-JUN-1995
DEFINITION  yl94g10.r1 Soares infant brain 1NIB Homo sapiens cDNA clone
            IMAGE:45995 5' similar to gb:S66427 RETINOBLASTOMA BINDING PROTEIN
            1 (HUMAN);, mRNA sequence.
ACCESSION   H08612
VERSION     H08612.1  GI:873434
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 398)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 2081
            High quality sequence stops: 124
            Source: IMAGE Consortium, LLNL
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 2081   Std Error: 0.00
            Seq primer: M13RP1
            High quality sequence stop: 124.
FEATURES             Location/Qualifiers
     source          1..398
                     /organism="Homo sapiens"
                     /db_xref="GDB: 418536"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:45995"
                     /clone_lib="Soares infant brain 1NIB"
                     /sex="female"
                     /dev_stage="73 days post natal"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: whole brain; Vector: Lafmid BA; Site_1: Not
                     I; Site_2: Hind III; 1st strand cDNA was primed with a Not
                     I - oligo(dT) primer [5'
                     AACTGGAAGAATTCGCGGCCGCAGGAATTTTTTTTTTTTTTTTT 3'];
                     double-stranded cDNA was ligated to Hind III adaptors
                     (Pharmacia), digested with Not I and directionally cloned
                     into the Not I and Hind III sites of the Lafmid BA vector.
                     Library went through one round of normalization. Library
                     constructed by Bento Soares and M.Fatima Bonaldo."
BASE COUNT      141 a     73 c     90 g     91 t      3 others
ORIGIN
      1  aaaggcacaa atagtagtga tagtgaagaa ctttcagctg gtgaaagtat aactaagagt
     61  cagccagtca aatcagtttc cactggaatg aagtctcata gtaccaaatc tcccgcaagg
    121  acgcagctcc agggaaatgt ggaaagaatg gtgataagga tcctgatctc aaggaaccca
    181  gtaatcgatt acccaaagtt tacaaatgga gttttcagat gtcggacctg ggaaatatga
    241  caagtgccga acgcatcaca attcttcaag aaaaacttca agaaatcaga aaacattatc
    301  tgtcattaaa atctgaagta gcttccattg atcggagggn gaaagcgttt taaagnagga
    361  aaggagngga ggaaagtgct gcttacatcc tcattcct
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//

link save

```
LOCUS       H38607                  437 bp    mRNA    linear   EST 16-AUG-1995
DEFINITION  yp48e07.r1 Soares retina N2b4HR Homo sapiens cDNA clone
            IMAGE:190692 5', mRNA sequence.
ACCESSION   H38607
VERSION     H38607.1  GI:908106
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 437)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 2679
            High quality sequence stops: 341
            Source: IMAGE Consortium, LLNL
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 2679   Std Error: 0.00
            Seq primer: M13RP1
            High quality sequence stop: 341.
FEATURES             Location/Qualifiers
     source          1..437
                     /organism="Homo sapiens"
                     /db_xref="GDB: 3847101"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:190692"
                     /clone_lib="Soares retina N2b4HR"
                     /sex="male"
                     /tissue_type="retina"
                     /dev_stage="55 year old"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: eye; Vector: pT7T3D (Pharmacia) with a
                     modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st
                     strand cDNA was primed with a Not I - oligo(dT) primer [5'
                     TGTTACCAATCTGAAGTGGGAGCGGCCGCGCTTTTTTTTTTTTTTTTT 3'],
                     double-stranded cDNA was size selected, ligated to Eco RI
                     adapters (Pharmacia), digested with Not I and cloned into
                     the Not I and Eco RI sites of a modified pT7T3 vector
                     (Pharmacia). The retinas were obtained from a 55 year old
                     Caucasian  and total cellular poly(A)+ RNA was extracted 6
                     hrs after their removal. The retina RNA  was kindly
                     provided by Roderick R. McInnes M.D. Ph.D. from the
                     University  of Toronto. Library constructed by Bento
                     Soares and M.Fatima Bonaldo. "
BASE COUNT      106 a     84 c     83 g    163 t      1 others
ORIGIN
      1  tgacttcatc ttcttcataa tcagtatctt cgggataata cttctatatc tttccttaat
     61  ctttctggag attttgacac tggtttggat attaccaaat ctgcatgaac tttgttttct
    121  tctagcaaag atgaactgtt ctgttcctcc tttgaaataa gatcatttct gttgttggtc
```

```
     181  aaatgatcaa tcttagattc ctctttgcca ttattatcca tgtcttgagc acctctctca
     241  tcttcctgct cactgtcttc agcagaactt tcagaagctt gaagtccatt aaaggatcga
     301  agtaatttct atggacttaa tatggagcag tatcagagtt tttggcatca gtgagatcca
     361  gtttgggatn ccatttccag gagatgggat ttgtctgaaa tggtgggttt gggccaagcg
     421  ccgaagttta cagtttt
//
```

link save

```
LOCUS       H39516                  481 bp    mRNA    linear   EST 16-AUG-1995
DEFINITION  yo54h10.r1 Soares breast 3NbHBst Homo sapiens cDNA clone
            IMAGE:181795 5' similar to gb:S66427 RETINOBLASTOMA BINDING PROTEIN
            1 (HUMAN);, mRNA sequence.
ACCESSION   H39516
VERSION     H39516.1  GI:915592
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 481)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            Insert Size: 773
            High quality sequence stops: 400
            Source: IMAGE Consortium, LLNL
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 773   Std Error: 0.00
            Seq primer: M13RP1
            High quality sequence stop: 400.
FEATURES             Location/Qualifiers
     source          1..481
                     /organism="Homo sapiens"
                     /db_xref="GDB: 3814995"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:181795"
                     /clone_lib="Soares breast 3NbHBst"
                     /sex="Female"
                     /dev_stage="adult"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: breast; Vector: pT7T3D (Pharmacia) with a
                     modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st
                     strand cDNA was primed with a Not I - oligo(dT) primer [5'
                     TGTTACCAATCTGAAGTGGGAGCGGCCGCCCTTTTTTTTTTTTTTTTT 3'],
                     double-stranded cDNA was ligated to Eco RI adaptors
                     (Pharmacia), digested with Not I and cloned into the Not I
                     and Eco RI sites of a modified pT7T3 vector (Pharmacia).
                     Library went through one round of normalization to a Cot =
                     20. Library constructed by Bento Soares and M.Fatima
                     Bonaldo."
BASE COUNT      103 a    133 c     82 g    163 t
ORIGIN
      1  cacctctctc cctctccctc cctccctcct ctccttcctc tggtatatga ttagatcttc
     61  ttcctctatt tgttttcttt cctatgactg gagtgccaaa atgctcaggg ttggtgagtg
    121  ggagctggtc taatgtttca ctttcagcaa aatgcctctc tcctttcagg cacagtgaag
    181  atcgtctcag tgtcttctca tctccgtcat caaaaactac agtgtaccaa ctcgcatctg
    241  ttagtttatt gataacagct tcctgatatg caccatcaag attcttcact tccacaatag
    301  ctcctacctt tagtgggccc tttatgtggt catcctgaac ttccactgtt gaagaatcat
```

```
     361  gtctaaatgt caccttgact ttgacaagtc tttttgctgt cttgatcttg ggcttcacaa
     421  aaggctcctc tgtatttagc actcacatca gtgcccactg tcaaataggg gaggctcatc
     481  a
//
```

link save

```
LOCUS       W37603                  427 bp    mRNA    linear   EST 10-OCT-1996
DEFINITION  zc10h08.r1 Soares_parathyroid_tumor_NbHPA Homo sapiens cDNA clone
            IMAGE:321951 5' similar to gb:S66427 RETINOBLASTOMA BINDING PROTEIN
            1 (HUMAN);, mRNA sequence.
ACCESSION   W37603
VERSION     W37603.1  GI:1319217
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 427)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 648   Std Error: 0.00
            Seq primer: mob.REGA+ET
            High quality sequence stop: 390.
FEATURES             Location/Qualifiers
     source          1..427
                     /organism="Homo sapiens"
                     /db_xref="GDB: 1259609"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:321951"
                     /clone_lib="Soares_parathyroid_tumor_NbHPA"
                     /tissue_type="parathyroid tumor"
                     /dev_stage="adult"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: parathyroid gland; Vector: pT7T3D (Pharmacia
                     ) with a modified polylinker; Site_1: Not I; Site_2: Eco
                     RI; 1st strand cDNA was primed with a Not I - oligo(dT)
                     primer
                     [5'-TGTTACCAATCTGAAGTGGGAGCGGCCGCACCAATTTTTTTTTTTTTTTTTT
                     TTTTT-3'], double-stranded cDNA was size selected, ligated
                     to Eco RI adapters (Pharmacia), digested with Not I and
                     cloned into the Not I and Eco RI sites of a modified pT7T3
                     vector (Pharmacia). Library went through one round of
                     normalization to a Cot = 5. Library constructed by Bento
                     Soares and M.Fatima Bonaldo. RNA from sporadic parathyroid
                     adenomas was kindly provided by Dr. Stephen Marx, National
                     Institute of Diabetes and Digestive and Kidney Diseases,
                     NIH."
BASE COUNT      106 a    112 c     77 g    132 t
ORIGIN
        1  aaagtgggag ctggtctaat gtttcacttt cagcaaaatg cctctctcct ttcaggcaca
       61  gtgaagatcg tctcagtgtc ttctcatctc cgtcatcaaa aactacagtg taccaactcg
      121  catctgttag tttattgata acagcttcct gatatgcacc atcaagattc ttcacttcca
      181  caatagctcc tacctttagt gggcccttta tgtggtcatc ctgaacttcc actgttgaag
      241  aatcatgtct aaatgtcacc ttgactttga caagtctttt tgctgtcttg atcttggctt
```

```
     301  cacaaaaggc tcctctgtat ttagcactca catcagtgcc cactgtcaaa tagggaggct
     361  catcaagggc cttcatgatg actctgggac caaggtatcc tctaaaacac caggttcagc
     421  tgcacct
//
```

● link save

```
LOCUS       W67770                  562 bp    mRNA    linear   EST 15-OCT-1996
DEFINITION  zd37g11.r1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone
            IMAGE:342884 5', mRNA sequence.
ACCESSION   W67770
VERSION     W67770.1  GI:1376642
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 562)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 1152   Std Error: 0.00
            Seq primer: mob.REGA+ET
            High quality sequence stop: 396.
FEATURES             Location/Qualifiers
     source          1..562
                     /organism="Homo sapiens"
                     /db_xref="GDB: 1268259"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:342884"
                     /clone_lib="Soares_fetal_heart_NbHH19W"
                     /sex="unknown"
                     /dev_stage="19 weeks"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: heart; Vector: pT7T3D (Pharmacia) with a
                     modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st
                     strand cDNA was primed with a Not I - oligo(dT) primer [5'
                     TGTTACCAATCTGAAGTGGGAGCGGCCGCATCTTTTTTTTTTTTTTTT 3'],
                     double-stranded cDNA was size selected, ligated to Eco RI
                     adapters (Pharmacia), digested with Not I and cloned into
                     the Not I and Eco RI sites of a modified pT7T3 vector
                     (Pharmacia). Library went through one round of
                     normalization to a Cot = 5. Library constructed by
                     M.Fatima Bonaldo. This library was constructed from the
                     same fetus as the fetal lung library, Soares fetal lung
                     NbHL19W."
BASE COUNT      139 a    129 c     98 g    187 t      9 others
ORIGIN
      1  tttcatcatc ttcctcctcc tcttcttcct ctgcttcact gctagagcta tcttctttca
     61  attcagtctt ccagttagca ggaatagttc tacttttgtg aaattcaagt gcctgttcaa
    121  aggcttgctt taaaacagca tcaggctttg gtgcagtgtc actagtaatt tcatggacat
    181  cttttcttgg aactgaagta aattttccat ctttgaaaga tcgaacaaga atattgtcct
    241  tttttacagc aatctcatca ctacaatcag gacaaaccac caatgcagga aaccacagtg
    301  ctttcttttt atccaaacta atgtaatcta cacatacaac tttgcctagt agctcatcaa
    361  tctgtttcct atcatcctca tcttcatcac tggaggatga tgaagactnt tcctctgggt
    421  anatgattag atcttcttcc tcnaatttgg tttncttcct atgactggng tgccaaaatg
```

```
     481  ctcaggggtt ggtnagtggg gagctgggtc naaatggttc accttcaggc aaaaaggnct
     541  ctctcctttc agggcacngt gg
//
```

link save

```
LOCUS       W67771                  568 bp    mRNA    linear   EST 15-OCT-1996
DEFINITION  zd37g11.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone
            IMAGE:342884 3' similar to gb:S66427 RETINOBLASTOMA BINDING PROTEIN
            1 (HUMAN);, mRNA sequence.
ACCESSION   W67771
VERSION     W67771.1  GI:1376643
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 568)
  AUTHORS   Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
            ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J.,
            Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston
            ,R., Williamson,A., Wohldmann,P. and Wilson,R.
  TITLE     The WashU-Merck EST Project
  JOURNAL   Unpublished (1995)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Possible reversed clone: polyT not found
            Insert Length: 1152   Std Error: 0.00
            Seq primer: mob.REGA+ET
            High quality sequence stop: 427.
FEATURES             Location/Qualifiers
     source          1..568
                     /organism="Homo sapiens"
                     /db_xref="GDB: 1268259"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:342884"
                     /clone_lib="Soares_fetal_heart_NbHH19W"
                     /sex="unknown"
                     /dev_stage="19 weeks"
                     /lab_host="DH10B (ampicillin resistant)"
                     /note="Organ: heart; Vector: pT7T3D (Pharmacia) with a
                     modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st
                     strand cDNA was primed with a Not I - oligo(dT) primer [5'
                     TGTTACCAATCTGAAGTGGGAGCGGCCGCATCTTTTTTTTTTTTTTTTT 3'],
                     double-stranded cDNA was size selected, ligated to Eco RI
                     adapters (Pharmacia), digested with Not I and cloned into
                     the Not I and Eco RI sites of a modified pT7T3 vector
                     (Pharmacia). Library went through one round of
                     normalization to a Cot = 5. Library constructed by
                     M.Fatima Bonaldo. This library was constructed from the
                     same fetus as the fetal lung library, Soares fetal lung
                     NbHL19W."
BASE COUNT      149 a    129 c    164 g    122 t      4 others
ORIGIN
      1  gcgncgngcc aaacaaaggt accagtcgcc gccgcggagg aggaggagcc ggagcctctg
     61  cctcagcagc cgctggaccc gccgcccttc ttccccatct ctcccccggg cctgctggtt
    121  ttgggggga gaaggagaga ggggactctg gacgtgccag ggtcagatct cgcctccgag
    181  gaaggtgcag ctgaacctgg tgttttagag gataccttgg tcccagagtc atcatgaagg
    241  cccttgatga gcctccctat ttgacagtgg gcactgatgt gagtgctaaa tacagaggag
    301  ccttttgtga agccaagatc aagacagcaa aaagacttgt caaagtcaag gtgacattta
```

```
      361  gacatgattc ttcaacagtg gaagttcagg atgaccacat aaagggccca ctaaaggtag
      421  gagctattgt ggaagtgaag aatcttgatg gtgcatatca ggaagctgtt atcaataaac
      481  taacagatgc gaatttngta cactgtagtt ttttgaatga ccggagatga gaagaccctg
      541  ngacgatctt cactgtgcct gaaaagag
//
```

LOCUS W84531
DEFINITION zd90h11.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:356805 3' similar to gb:S66427 RETINOBLASTOMA BINDING PROTEIN 1 (HUMAN);, mRNA sequence. 671 bp mRNA linear EST 17-OCT-1996
ACCESSION W84531
VERSION W84531.1 GI:1395643
KEYWORDS EST.
SOURCE human.
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 671)
AUTHORS Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston ,R., Williamson,A., Wohldmann,P. and Wilson,R.
TITLE The WashU-Merck EST Project
JOURNAL Unpublished (1995)
COMMENT Contact: Wilson RK
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL ; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
Possible reversed clone: polyT not found
Insert Length: 1159 Std Error: 0.00
Seq primer: ETPrimer
High quality sequence stop: 481.

FEATURES Location/Qualifiers
source 1..671
/organism="Homo sapiens"
/db_xref="GDB: 1273349"
/db_xref="taxon:9606"
/clone="IMAGE:356805"
/clone_lib="Soares_fetal_heart_NbHH19W"
/sex="unknown"
/dev_stage="19 weeks"
/lab_host="DH10B (ampicillin resistant)"
/note="Organ: heart; Vector: pT7T3D (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand cDNA was primed with a Not I - oligo(dT) primer [5' TGTTACCAATCTGAAGTGGGAGCGGCCGCATCTTTTTTTTTTTTTTTTT 3'], double-stranded cDNA was size selected, ligated to Eco RI adapters (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of a modified pT7T3 vector (Pharmacia). Library went through one round of normalization to a Cot = 5. Library constructed by M.Fatima Bonaldo. This library was constructed from the same fetus as the fetal lung library, Soares fetal lung NbHL19W."

BASE COUNT 181 a 150 c 192 g 143 t 5 others
ORIGIN

```
   1 gcgaccgcca aacaaaggta ccagtcgccg ccgcgggagg aggaggagcc ggagcctctg
  61 cctcagcagc cgctggaccc gccgcccttc ttccccatct ctcccncggg cctgctggtt
 121 ttgggggggga gaaggagaga ggggactctg gacgtgccag ggtcagatct cgcctccgag
 181 gaaggtgcag ctgaacctgg tgttttagag gataccttgg tcccagagtc atcatgaagg
 241 cccttgatga gcctccctat ttgacagtgg gcactgatgt gagtgctaaa tacagaggag
 301 ccttttgtga agccaagatc aagacagcaa aaagacttgt caaagtcaag gtgacattta
```

```
361  gacatgattc ttcaacagtg gaagttcagg atgaccacat aaagggccca ctaaaggtag
421  gagctattgt ggaagtgaag aatcttgatg gtgcatatca ggaagctgtt atcaataaac
481  taaccagatg cgagttggta cactgtagtt tttgatgacg gagatgagaa gacactgaga
541  cgatcttcat gtgcctgaaa gagagaagca tttgctgaaa gtgaacatta gaccagttcc
601  aatnaccanc ctgagcattt ggcaccccag tcatgggaag aaccaattgg ggagagtnta
661  tctntccagg g
//
```

link ● save

```
LOCUS       AA399016                 520 bp    mRNA    linear   EST 16-MAY-1997
DEFINITION  zt93d11.r1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:729909
            5', mRNA sequence.
ACCESSION   AA399016
VERSION     AA399016.1  GI:2052815
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 520)
  AUTHORS   Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S.,
            Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Martin,J., Moore,B.
            , Schellenberg,K., Steptoe,M., Tan,F., Theising,B., White,Y., Wylie
            ,T., Waterston,R. and Wilson,R.
  TITLE     WashU-Merck EST Project 1997
  JOURNAL   Unpublished (1997)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Seq primer: -28m13 rev2 ET from Amersham
            High quality sequence stop: 492.
FEATURES             Location/Qualifiers
     source          1..520
                     /organism="Homo sapiens"
                     /db_xref="GDB: 5926438"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:729909"
                     /clone_lib="Soares_testis_NHT"
                     /sex="male"
                     /lab_host="DH10B"
                     /note="Vector: pT7T3D-Pac (Pharmacia) with a modified
                     polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand cDNA
                     was prepared from mRNA obtained from Clontech Laboratories
                     , Inc., and primed with  a Not I - oligo(dT) primer [5'
                     TGTTACCAATCTGAAGTGGGAGCGGCCGCCCAATTTTTTTTTTTTTTTT 3'].
                     Double-stranded cDNA was ligated to Eco RI adaptors
                     (Pharmacia), digested with Not I and cloned into the Not I
                     and Eco RI sites of the modified pT7T3 vector. Library
                     went through one round of normalization to Cot5, and was
                     constructed  by Bento Soares and M. Fatima Bonaldo. "
BASE COUNT      154 a     93 c    102 g    171 t
ORIGIN
        1  cttcaccttc atccagttcc ataacagctg ctgttatgtt aactttagct gaaccgtcaa
       61  tgtccagcgc atcacaaaat ggaatgtcag ttgagtgcag gtgacagcag gacttgctaa
      121  agcactttgc acttaatggc tgttgagggc cactttttct ttatactgca cagtggcaca
      181  aaaaaatatc agacaagcac tattttatat ttaaaaattg tttcttgaca agctgacttg
      241  gcacttaagt gcacttttct atgaagaaaa agtacaatga actgcttttc ctcaagcaat
      301  aattgtttcc aacttgtctg ggaattgtgt gtctggtaac tggaaggcct tccactgtgg
      361  caaatggagg cttttcactg cctgtagaga caatacagta agcatagtta aggggtgggt
      421  cagaacatgt taagataact tactgtatat gtattccctt gtattttgtt aaagctggaa
      481  catttgatat ttttccattt atttatgaaa aaatatgaac
//
```

link save

```
LOCUS       AA479433                 500 bp    mRNA    linear   EST 08-AUG-1997
DEFINITION  zv14d12.r1 Soares_NhHMPu_S1 Homo sapiens cDNA clone IMAGE:753623
            5', mRNA sequence.
ACCESSION   AA479433
VERSION     AA479433.1  GI:2207989
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 500)
  AUTHORS   Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S.,
            Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Martin,J., Moore,B.
            , Schellenberg,K., Steptoe,M., Tan,F., Theising,B., White,Y., Wylie
            ,T., Waterston,R. and Wilson,R.
  TITLE     WashU-Merck EST Project 1997
  JOURNAL   Unpublished (1997)
COMMENT     Contact: Wilson RK
            Washington University School of Medicine
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: est@watson.wustl.edu
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Seq primer: -28m13 rev2 ET from Amersham
            High quality sequence stop: 470.
FEATURES             Location/Qualifiers
     source          1..500
                     /organism="Homo sapiens"
                     /db_xref="GDB: 5976486"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:753623"
                     /clone_lib="Soares_NhHMPu_S1"
                     /tissue_type="Pooled human melanocyte, fetal heart, and
                     pregnant uterus"
                     /lab_host="DH10B"
                     /note="Organ: mixed (see below); Vector: pT7T3D-Pac
                     (Pharmacia) with a modified polylinker; Site_1: Not I;
                     Site_2: Eco RI; Equal amounts of plasmid DNA from three
                     normalized libraries (melanocyte 2NbHM, pregnant uterus
                     NbHPU, and fetal heart NbHH19W) were mixed, and ss circles
                     were made in vitro. Following HAP purification, this DNA
                     was used as tracer in a subtractive hybridization
                     reaction. The driver was PCR-amplified cDNAs from pools of
                     5,000 clones made from the same 3 libraries. The pools
                     consisted of I.M.A.G.E. clones 260232-265223,
                     340488-345479, and 484488-489479."
BASE COUNT      158 a     76 c     96 g    170 t
ORIGIN
        1  ggcacttaag tcacttttt atgaagaaaa agtacaatga actgcttttc ctcaagcaat
       61  aattgtttcc aacttgtctg ggaattgtgt gtctggtaac tggaaggcct tccactgtgg
      121  caaatggagg cttttcactg cctgtagaga caatacagta agcatagtta aggggtgggt
      181  cagaacatgt taagataact tactgtatat gtattccctt gtattttgtt aaagctggaa
      241  catttgatat ttttccattt atttatgaaa aaatatgaac ctatttttcat ttgtacaagg
      301  taattgtttt ttaaagcaag tcaccttagg gtggctttaa ttgtataagt caagcacatg
      361  taataaattc aaaacctgca gttaacagga tattagacat caatcctggt aaccaaatat
      421  taaagattct ctttaaaaaa gactgaacat gtttacaggt ttgaattagg ctaaaaggtc
      481  ttgcagtggc ttttcatggc
//
```

link save

```
LOCUS       AA262427                461 bp    mRNA    linear   EST 13-AUG-1997
DEFINITION  zs17e11.r1 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGE:685484 5'
            similar to TR:G435776 G435776 RETINOBLASTOMA BINDING PROTEIN 1. ;,
            mRNA sequence.
ACCESSION   AA262427
VERSION     AA262427.1  GI:1897923
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 461)
  AUTHORS   NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
  TITLE     National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
            Tumor Gene Index
  JOURNAL   Unpublished (1997)
COMMENT     Contact: Robert Strausberg, Ph.D.
            Email: cgapbs-r@mail.nih.gov
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Possible reversed clone: similarity on wrong strand
            Insert Length: 1206   Std Error: 0.00
            Seq primer: -28m13 rev2 ET from Amersham
            High quality sequence stop: 422.
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                     /db_xref="taxon:9606"
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                     /clone_lib="NCI_CGAP_GCB1"
                     /tissue_type="germinal center B cell"
                     /lab_host="DH10B"
                     /note="Vector: pT7T3D-Pac (Pharmacia) with a modified
                     polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand cDNA
                     was prepared from human tonsillar cells enriched for
                     germinal center B cells by flow sorting (CD20+, IgD-),
                     provided by Dr. Louis M. Staudt (NCI), Dr. David Allman
                     (NCI) and Dr. Gerald Marti (CBER).  cDNA synthesis was
                     primed with a Not I - oligo(dT) primer
                     [5'-TGTTACCAATCTGAAGTGGGAGCGGCCGCCTCATTTTTTTTTTTTTTTTT-3'
                     ]. Double-stranded cDNA was ligated to Eco RI adaptors
                     (Pharmacia), digested with Not I and cloned into the Not I
                     and Eco RI sites of the modified pT7T3 vector. Library
                     went through one round of normalization, and was
                     constructed by Bento Soares and M. Fatima Bonaldo."
BASE COUNT      120 a    111 c     64 g    166 t
ORIGIN
        1  catcatcttc ctcctcctct tcttcctctg cttcactgct agagctatct tctttcaatt
       61  cagtcttcca gttagcagga atagttctac ttttgtgaaa ttcaagtgcc tgttcaaagg
      121  cttgctttaa aacagcatca ggctttggtg cagtgtcact agtaatttca tggacatctt
      181  ttcttggaac tgaagtaaat tttccatctt tgaaagatcg aacaagaata ttgtcctttt
      241  ttacagcaat ctcatcacta caatcaggac aaaccaccaa tgcaggaaac cacagtgctt
      301  tctttttatc caaactaatg taatctacac atacaacttt gcctagtagc tcatcaatct
      361  gtttcctatc atcctcatct tcatcactgg aggatgatga agactcttcc tctggtatat
      421  gattagatct tcttcctcta tttgttttct ttcctatgac a
//
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link save

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LOCUS       AA279595                399 bp    mRNA    linear   EST 15-AUG-1997
DEFINITION  zs86f05.r1 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGE:704385 5'
            similar to SW:RBB1_HUMAN P29374 RETINOBLASTOMA BINDING PROTEIN 1 ;,
            mRNA sequence.
ACCESSION   AA279595
VERSION     AA279595.1  GI:1921068
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 399)
  AUTHORS   NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
  TITLE     National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
            Tumor Gene Index
  JOURNAL   Unpublished (1997)
COMMENT     Contact: Robert Strausberg, Ph.D.
            Email: cgapbs-r@mail.nih.gov
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            Insert Length: 709   Std Error: 0.00
            Seq primer: -28m13 rev2 ET from Amersham
            High quality sequence stop: 328.
FEATURES             Location/Qualifiers
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                     /db_xref="taxon:9606"
                     /clone="IMAGE:704385"
                     /clone_lib="NCI_CGAP_GCB1"
                     /tissue_type="germinal center B cell"
                     /lab_host="DH10B"
                     /note="Vector: pT7T3D-Pac (Pharmacia) with a modified
                     polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand cDNA
                     was prepared from human tonsillar cells enriched for
                     germinal center B cells by flow sorting (CD20+, IgD-),
                     provided by Dr. Louis M. Staudt (NCI), Dr. David Allman
                     (NCI) and Dr. Gerald Marti (CBER).  cDNA synthesis was
                     primed with a Not I - oligo(dT) primer
                     [5'-TGTTACCAATCTGAAGTGGGAGCGGCCGCCTCATTTTTTTTTTTTTTTTT-3'
                     ]. Double-stranded cDNA was ligated to Eco RI adaptors
                     (Pharmacia), digested with Not I and cloned into the Not I
                     and Eco RI sites of the modified pT7T3 vector. Library
                     went through one round of normalization, and was
                     constructed by Bento Soares and M. Fatima Bonaldo."
BASE COUNT      127 a     87 c    101 g     84 t
ORIGIN
        1  gcagaggagt cactgcagac tgtggctgaa gaggagagtt gttcacccag tgtagaacta
       61  gagctaccac atccagtcaa tgtcgatagt aaacccattg aagaaaaaac agtagaggtc
      121  aatgacagaa aagcagaatt tccaagtagt ggcagtaatt cagtgctaaa tacccctcct
      181  actacacctg aatcgccttc atcagtcact gtaacagaag gcagccggca gcagtcttct
      241  gtaacagtat cagaaccact ggctccaaac caagaagagg ttcgaagtat caagagtgaa
      301  actgatagca caattgaggt ggatagtgtt gctggggagc tccaagacct ccagtctgaa
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link save

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LOCUS       AA485189                 363 bp    mRNA    linear   EST 15-AUG-1997
DEFINITION  aa40d12.r1 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGE:815735 5'
            similar to gb:S66427 RETINOBLASTOMA BINDING PROTEIN 1 (HUMAN);,
            mRNA sequence.
ACCESSION   AA485189
VERSION     AA485189.1  GI:2214408
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 363)
  AUTHORS   NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
  TITLE     National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
            Tumor Gene Index
  JOURNAL   Unpublished (1997)
COMMENT     Contact: Robert Strausberg, Ph.D.
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Louis M. Staudt, M.D., Ph.D., David Allman,
            Ph.D., Gerald Marti, M.D.
             cDNA Library Preparation: M. Bento Soares, Ph.D., M. Fatima
            Bonaldo, Ph.D.
             cDNA Library Arrayed by: Greg Lennon, Ph.D.
             DNA Sequencing by: Washington University Genome Sequencing Center
             Clone distribution: NCI-CGAP clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            www-bio.llnl.gov/bbrp/image/image.html
            Seq primer: -28m13 rev1 ET from Amersham.
FEATURES             Location/Qualifiers
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                     /clone_lib="NCI_CGAP_GCB1"
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                     /lab_host="DH10B"
                     /note="Vector: pT7T3D-Pac (Pharmacia) with a modified
                     polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand cDNA
                     was prepared from human tonsillar cells enriched for
                     germinal center B cells by flow sorting (CD20+, IgD-),
                     provided by Dr. Louis M. Staudt (NCI), Dr. David Allman
                     (NCI) and Dr. Gerald Marti (CBER).  cDNA synthesis was
                     primed with a Not I - oligo(dT) primer
                     [5'-TGTTACCAATCTGAAGTGGGAGCGGCCGCCTCATTTTTTTTTTTTTTTTT-3'
                     ]. Double-stranded cDNA was ligated to Eco RI adaptors
                     (Pharmacia), digested with Not I and cloned into the Not I
                     and Eco RI sites of the modified pT7T3 vector. Library
                     went through one round of normalization, and was
                     constructed by Bento Soares and M. Fatima Bonaldo."
BASE COUNT      108 a     75 c     58 g    122 t
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      121  acatttaaca ttgtatcctg cagctgaatt taagacaggg attccaagat cttggtagac
      181  ttgtttccaa acagctccac tttcaatatt atcaaatcct ccaagtttgt gtacaagtct
      241  gaataactta aagagattca aatttcgata tccaagtaca ggtcgtttgt taataggtgt
      301  acctctatct tccataaatt tgtacaattg ctgaagaaag ttctcccttt cttctggaaa
      361  tgg
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LOCUS       AA296993                271 bp    mRNA    linear   EST 18-APR-1997
DEFINITION  EST112543 Adrenal gland tumor Homo sapiens cDNA 5' end, mRNA
            sequence.
ACCESSION   AA296993
VERSION     AA296993.1  GI:1949324
KEYWORDS    EST.
SOURCE      human.
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 271)
  AUTHORS   Adams,M.D., Kerlavage,A.R., Fleischmann,R.D., Fuldner,R.A., Bult
            ,C.J., Lee,N.H., Kirkness,E.F., Weinstock,K.G., Gocayne,J.D., White
            ,O., Sutton,G., Blake,J.A., Brandon,R.C., Man-Wai,C., Clayton,R.A.,
            Cline,T.R., Cotton,M.D., Earle-Hughes,J., Fine,L.D., Fitzgerald
            ,L.M., Fitzhugh,W.M., Fritchman,J.L., Geoghagen,N.S., Glodek,A.,
            Gnehm,C.L., Hanna,M.C., Hedblom,E., Hinkle,P.S.Jr., Kelley,J.M.,
            Kelley,J.C., Liu,L.-I., Marmaros,S.M., Merrick,J.M.,
            Moreno-Palanques,R.F., McDonald,L.A., Nguyen,D.T., Pelligrino,S.M.,
            Phillips,C.A., Ryder,S.E., Scott,J.L., Saudek,D.M., Shirley,R.,
            Small,K.V., Spriggs,T.A., Utterback,T.R., Weidman,J.F., Li,Y.,
            Bednarik,D.P., Cao,L., Cepeda,M.A., Coleman,T.A., Collins,E.J.,
            Dimke,D., Feng,D.-F., Ferrie,A., Fischer,C., Hastings,G.A., He,W.W.
            , Hu,J.S., Greene,J.M., Gruber,J., Hudson,P., Kim,A.K., Kozak,D.L.,
            Kunsch,C., Hungjun,J., Li,H., Meissner,P.S., Olsen,H., Raymond,L.,
            Wei,Y.F., Wing,J., Xu,C., Yu,G.L., Ruben,S.M., Dillion,P.J., Fannon
            ,M.R., Rosen,C.A., Haseltine,W.A., Fields,C., Fraser,C.M. and
            Venter,J.C.
  TITLE     Initial assessment of human gene diversity and expression patterns
            based upon 83 million nucleotides of cDNA sequence
  JOURNAL   Nature 377 (6547 Suppl), 3-174 (1995)
  MEDLINE   96026280
COMMENT     Contact: Kerlavage, AR
            Bioinformatics
            The Institute for Genomic Research
            9712 Medical Center Drive, Rockville, MD 20850 USA
            Tel: 3018699056
            Fax: 3018699423
            Email: arkerlav@tigr.org
            For clone availability, additional sequence and expression
            information related to this EST, please check the TIGR Human Gene
            Index (http://www.tigr.org/tdb/hgi/hgi.html)
            Seq primer: M13 Reverse.
FEATURES             Location/Qualifiers
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                     /clone_lib="Adrenal gland tumor"
                     /dev_stage="adult"
                     /note="Organ: adrenal gland; Vector: pBluescript SK-;
                     Site_1: EcoRI; Site_2: XhoI"
BASE COUNT      124 a     29 c     67 g     51 t
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      61  agacaatgaa aatctggatg acaaagatga tgacacaact agggtagatg aatccctcaa
     121  cataaaggta gaagctgagg aagaaaaagc aaaatctgga gatgaaacga ataaagaaga
     181  agatgaagat gatgaagaag cagaagagga ggaggaggag gaagaagaag aagaggaaga
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